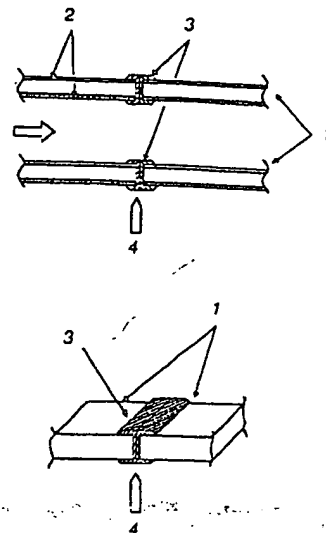


(54) WELDING METHOD FOR FORMING PASSIVE FILM OF CHROMIUM OXIDE ON WELD ZONE AND WELDED STRUCTURE

(11) 6-210483 (A) (43) 2.8.1994 (19) JP.  
 (21) Appl. No. 5-5438 (22) 18.1.1993  
 (71) TADAHIRO OMI (72) TADAHIRO OMI  
 (51) Int. Cl<sup>5</sup>. B23K31/00, B23K9/02, B23K9/23, B23K9/235

**PURPOSE:** To form oxidized passive films which have corrosion resistance and extremely less produce out-gases on the surface of a weld zone by coating the ends of materials which are to be welded and have the oxidized passive films essentially consisting of chromium on the surfaces with films contg. the chromium, butting these ends and welding the ends.

**CONSTITUTION:** After SUS 316L pipings are electrolytically polished, these pipings are subjected to an oxidation treatment in an atmosphere of hydrogen and gaseous argon, by which the oxidized passive films contg. a large amt. of the chromium are formed on the inside surfaces. Both ends thereof are then subjected respectively to a chrome plating treatment. The ends of both pipings are thereafter butted against each other and the pipings subjected to the chrome plating treatment are welded by a tungsten inert gas welding method. As a result, the passive films of the chromium oxide having the surfaces which are excellent in acid corrosion resistance, are small in adsorption of moisture content and enable the easy removal of the moisture by low energy in spite of adsorption of the moisture thereon are formed in the weld zone and the parts near the weld zone during the welding stage.



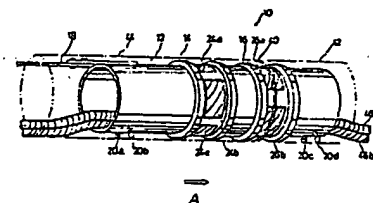
(1): material to be welded, (2): oxidized passive film, (3): chrome plating (chrome coating), (1): tungsten electrode, (5): back-seal gas

(54) METHOD AND JIG FOR RADIOGRAPHIC-TESTING WELDED PART OF TUBE CIRCUMFERENCE

(11) 6-210484 (A) (43) 2.8.1994 (19) JP  
 (21) Appl. No. 5-3848 (22) 13.1.1993  
 (71) TOKYO GAS CO LTD(2) (72) MITSUTOSHI HAYASHI(4)  
 (51) Int. Cl<sup>5</sup>. B23K31/00, G03B37/00, G03B42/02

**PURPOSE:** To provide a radiographic testing method for a welded part of a tube circumference and a radiographic testing jig by which a clear radiography can be obtained over the total range of a welded part with a simple operation and the quality of the welded part can accurately be judged whether it is normal or defective.

**CONSTITUTION:** A radiographic inspection jig 10 provided with a cylindrical body 12 freely inserting into two pieces of tubes 42, 44, and two annular X-ray shielding plates 14, 16 attached by separating a definite interval on an outer circumferential surface of this cylindrical body 12 are prepared, radiation films 26a-26d are arranged to be mutually opposed to the welded part 40 and the radiography of this welded part 40 is photographed thereafter, the radiation films 24a-24d are arranged to be mutually opposed to the welded part 40, and the radiography of the welded part 40 is photographed from the position different from the position where the radiation films 26a-26d are photographed.



A: promoting direction

(54) HIGH ENERGY BEAM WELDING METHOD OF PERIPHERAL JOINT OF TUBE

(11) 6-210485 (A) (43) 2.8.1994 (19) JP  
 (21) Appl. No. 3-109878 (22) 15.4.1991  
 (71) MITSUBISHI HEAVY IND LTD (72) SUMIO MORI(1)  
 (51) Int. Cl<sup>5</sup>. B23K33/00, B23K15/04, B23K26/00, B23K37/053

**PURPOSE:** To perform the padding edge preparation of the butted joint part of a tube in a few processes and at a low cost with high accuracy, and to perform the sound welding of a peripheral joint free from a defect caused by a high energy beam.

**CONSTITUTION:** When welding the peripheral joint of the tubes 1a and 1b by a high energy beam, first of all, a flange type padding groove 11 is formed by heating and compressing a butted joint part in a welding atmosphere, and then a high energy beam welding is performed to the groove 11.

